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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/463,510	06/26/2000	JOHN P. HELGESON	WARF H108	6417

7590 04/22/2002  
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1500 MARKET STREET  
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PHILADELPHIA, PA 19103

EXAMINER

WILDER, CYNTHIA B

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 04/22/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/463,510	Applicant(s) HELGESON ET AL.	
	Examiner Cynthia B Wilder	Art Unit 1637	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input checked="" type="checkbox"/> Other: <i>Detailed Action</i>        |

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## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election with traverse of Group I, claims 1-9 and SEQ ID NO: 5 and cancellation of claims 10-15 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the requirement for election of species is improper in that five species is a reasonable number of species as stated in 37 CFR 1.141. This is not found persuasive because the different species are based on patentably distinct sequences that are both structurally and functionally distinct one from the other. Additionally the searches for the different species are not coextensive in that the function of species SEQ ID NO: 1 corresponding to the nucleotide sequence of GO2<sub>586</sub> is not necessary or required for the function of the species SEQ ID NO: 3 corresponding to the nucleotide sequence of CT88. Likewise the function of species SEQ ID NO: 5 corresponding to a nucleotide sequence from *S. bulbocastanum* is not necessary or required for the function of species SEQ ID NO: 3 corresponding to the nucleotide sequence of CT88. Accordingly a search of the different species would require undue burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

### *Specification*

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

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***Claim Objections***

3. Claim 9 is objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It is suggested amending the claim to recite "A vector comprising the nucleic acid molecule of claim 8."

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his invention.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

(a) Claim 4 is indefinite because of improper dependency. The dependent claim refers to itself. Appropriate correction is required.

(b) Claim 8 is confusing at "complementary to part or all of a double-stranded molecule" because it is unclear what is meant by "complementary to ...double stranded molecule" when the term "complementary" refers to single stranded molecules. Additionally, it cannot be determined what is meant by "a part of .." because the term is ambiguous and has not been defined in the specification as originally filed. Thus a relationship between "a part of the isolated nucleic acid" and the isolated nucleic acid molecule itself cannot be determined. Clarification is required.

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***Claim Rejections - 35 USC § 102(b)***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Schumman et al. (*Physiologia Plantarum*, Vol. 82., pp A23, Abstract 134, December 1991). Regarding claims 1 and 6, Schumman et al. teach a late blight-resistant potato plant comprising a segment of a genome from *S. bulbocastanum* comprising a gene that confers resistance to late blight and wherein the late blight resistance gene is incorporated into the plant by somatic hybridization (entire abstract). Therefore the claimed invention of claims 1 and 6 is anticipated by the reference of Schumman et al.

7. Claims 1, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Helgeson et al. (*American Potato Plant*, Vol. 72, No. 10, page 629, first full paragraph, October 1995) Regarding claims 1, 5 and 6, Helgeson et al. teach a late blight-resistant potato plant comprising a segment of genome from *S. bulbocastanum* comprising a gene that confers resistance to late blight and also resistant to early blight. Helgeson teach that these results are obtained by somatic hybridization of a plant and a cell of *S. bulbocastanum* (entire extract). The reference of Helgeson et al. meets all of the limitations of the claimed invention of claims 1, 5 and 6.

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8. Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Barry et al. (5,536,653, July 16, 1996). Regarding claims 8 and 9, Barry et al. teach an isolated nucleic acid which is complementary to a part of the nucleic acid molecule of SEQ ID NO: 5 (col. 13 and 14, SEQ ID NO:4). Barry et al. further teach a vector comprising the nucleic acid molecule (see examples 1 and 2, col.4-7). Therefore the claimed invention is anticipated by the reference of Barry et al.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schumman et al. as applied to claims 1 and 6 above and further in view of Thieme et al. (*Euphytica*, vol. 97,

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pages 189-200, October 21, 2001). Regarding claim 3 and 7, Schumman et al. teach a late blight-resistant potato plant comprising a segment of a genome from *S. bulbocastanum* comprising a gene that confers resistance to late blight and wherein the late blight resistance gene is incorporated into the plant by somatic hybridization (entire abstract). Schumman et al. further teach screening progeny to see the inheritance of isozymes (abstract). Schumman et al. differs from the instant invention in that the abstract do not expressly teach using RAPD or RFLP markers or their sequence nor wherein the method of marker assisted selection. Thieme et al. teach a potato plant similar to that of Schumman et al. wherein somatic hybridization was performed to allow the introduction of resistant genes from wild species to cultivate potato. Thieme teaches wherein the late blight resistance gene is incorporated into plant by genetic transformation. Thieme et al. further teach wherein the hybrid clones are analyzed by RAPD analysis using the RAPD markers that can be used to identify foreign DNA (abstract and page 191, RAPD. analysis). Thieme et al. states that isozyme and RAPD analysis confirmed the hybrid nature of the regenerants (page 197, col. 2, first full paragraph). In view of the foregoing, it would be obvious to one of ordinary skill in the art at the time the claimed invention was made that the resistant somatic hybrids taught by Schumman et al. contain foreign DNA that can be identified by marker selection whether said marker is an isozyme as suggested by Schumman or markers such as RAPD and/or RFLP as suggested by Thieme. Furthermore, it is well known in the art that RFLP or RAPD analysis are commonly used to aid in the detection and mapping of multigenic traits in a number of plant species, such as tomato and potato plant species.

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***Conclusion***

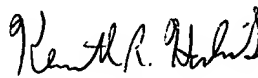
11. No claims are allowed.

12. Any inquiry concerning this communications or earlier communications should be directed to Examiner Cynthia Wilder whose telephone number is (703) 305-1680. The examiner can normally be reached on Monday through Friday from 9:30 am to 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached at (703) 308-1119. The official fax number for the Group is (703) 308-4242. The unofficial fax number is (703) 308-8724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Groups receptionist whose telephone number is (703) 308-0196.

Cynthia Wilder, Ph.D.

April 9, 2002

  
**KENNETH R. HORLICK, PH.D**  
**PRIMARY EXAMINER**

4/22/02